SYLLABUS: Computer Network & IT Security (under revision until 10 July 2017)

1 Idetification of Subject

1.1	**Subject**	Computer Network & IT Security
1.2	**Level**	U-University Mandatory Subject
1.3	**File Name**	U-01-Computer-Network-and-IT-Security-2.docx
1.4	**Semester**	1
1.5	**Quality Control**	Final Test, see evaluation
1.6	**Limitations**	open
1.7	**Other Study programs**	
1.8	**Responsible**	Dr. Ir. Rusman Rusyadi, MSc

2 Competency

After having the course, students are expected to:

- present the most up-to-date technology in ever changing discipline;
- explain why computer are essential components in business and society;
- explain the fundamental of computer and computer nomenclature, particularly
- differentiate among laptops, tablets, and servers
- describe the purpose and uses of smartphones, digital cameras, portable media players, e-book readers, and game devices
- describe the relationship between data and information
- briefly explain various input options
- explain the purpose of a browser, a search engine, and an online social network
- describe digital security risks associated with viruses and other malware, privacy, health, and the environment;
- differentiate between an operating system and applications;
- differentiate between wired and wireless technologies, and identify reasons individuals and businesses use networks;
- discuss how society uses technology in education, retail, finance, entertainment, health care, travel, government, science, publishing, and manufacturing;
- identify technology used by home users, small office/home office users, mobile users, power users, and enterprise users.

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3 Description of Subject

This course introduces standard fundamentals of computer hardware and software; IT tools as well as fundamental applications of Information Technology in today's activities. The course provides an introduction to basic concepts of information, information systems and the "Information Age", and also provides an overview on the creation, organization, analysis, storage, retrieval, and communication of information. Students will develop an understanding of basic computing and information systems principles and the social implications of information and information technology. In this course the following major topics are covered:

- The "Information Age" and the role of information in knowledge work
- Information systems and information technologies
- Planning for and developing information systems
- Personal information and information technology skills

These topics through in-class presentations, exercises discussions (both face-to- face and online), readings (from both text and on-line sources), exercises (both individual and group-based), and a variety of graded assignments and tests.

4 Learning Approach

Approach	Combination of Expository – inquiry and collaborative
Method	Discussion, questions answer, sample problems, group work
Students Task	Homework, presentation
Media	LCD projector

5 Evaluation

5.1	**Absence maximum**	25%
5.2	**Participation in Discussion**	05 Points
5.3	**Homework / Classwork**	05 Points
5.4	**Presentation /Simulation**	10 Poins
5.5	**Daily Quiz**	20 Points
5.6	**Final Examination**	60 Points
	Total	100 Points

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6	Content / Topics of Lecturing

Week	Content/ Topics of Lecturing	Text Book Chapt	Remark
1	**Introducing Today's Technologies: Computers, Devices, and the Web** • Today's technology; • Computers; • Mobile and Game devices; • Data and Information; • The Web; • Digital Security and Privacy; • Program and Apps; • Communications and Networks; • Technology uses.	Ch1	Group formation
2	**Connecting and Communicating Online: The Internet, Websites, and Media**	Ch2	Assignment: Personal
	• The Internet • Connecting to the internet; • The World Wide Web; • Types of websites; • Digital Media on the Web; • Other Internet Services.		website/Blog
3	**Computers and Mobile Devices: Evaluating Options for Home and Network** • Computer and Mobile Devices; • Mobile Computers and Desktops; • Servers; • Terminals; • Supercomputers; • Cloud Computing; • Mobile Devices; • Game Devices; • Embedded Computers; • Putting it all together; • Ports and Connections; • Protecting Hardware; • Health concerns of using Technology.	Ch3	Assignment: Evaluation of Personal website/Blog

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4, 5	**Programs and Apps: Productivity, Graphics, Security, and Other Tools** • Programs and Apps; • Productivity Applications; • Graphics and Media Applications • Personal Interest Applications; • Communications Applications; • Security Tools; • File, Disk, and System Management Tools.	Ch4	Assignment: Document generation and its evaluation
6	**Digital Security, Ethics, and Privacy: Threats, Issues, and Defenses** • Digital Security Risk • Internet and Network Attacks; • Unauthorized Access and use; • Software theft; • Information thefts; • Hardware thefts, vandalism, and Failure; • Backing Up – the Ultimate Safeguards; • Wireless Security; • Ethics and society • Information Privacy.	Ch5	Assignment: Slide Presentation
7, 8	**Student Presentations:** • Presenting the assessment based on chosen topic. • Each student has to present in 10 minutes their topic taken from the Textbook or Internet in front of their class mate.		
9	**Computing Components: Processors, Memory, the Cloud, and More** • Inside the Case; • Processors; • Cloud Computing; • Data Representations; • Memory; • Adapters; • Buses; • Power Supply and Batteries.	Ch6	Assignment: Excel sheet

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10	**Input and Output: Extending Capabilities of Computers and Mobile Devices** • What is Input? • Keyboards; • Pointing Devices; • Touch Screens; • Pen Input; • Motion, Voice, and Video input; • Scanners and Reading devices; • What is Output? • Displays; • Printers; • Other Output Devices.	Ch-7	Assignment: Evaluation of Excel sheet
11	**Digital Storage: Preserving Content Locally and on the Cloud** • Storage; • Hard Drives; • Portable Flash Memory Storage; • Cloud storage; • Optical Discs; • Enterprise Storage; • Other types of Storage.	Ch-8	Assignment: Video Editing
12	**Operating Systems: Managing, Coordinating, and Monitoring Resources** • Operating Systems and Function; • Type of Operating Systems; • Desktop OS, • UNIX; • Server OS; • Mobile OS.	Ch-9	Assignment: Evaluation of Video Editing
13	**Communicating Digital Content: Wired and Wireless Networks and Devices** • Communications; • Networks; • Communications Software; • Network Communications Standard and Protocols; • Communications Lines; • Communications Devices; • Home Network; • Transmission Media; • Physical Transmission Media; • Wireless transmission Media.	Ch-10	Assignment: Database creation

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14	**Building Solutions: Database, System, and Application Development Tools** • Databases, Data, and Information; • File Processing Systems and Databases; • Database Management System; • System Development; • Application Development languages and Tools.	Ch-11	Assignment: Evaluation of Database
15	**Final Examination**		

7	Book Reference

5. Book Reference:

a) **Main Text Book:** *"Discovering Computers - 2016, Tools, Apps, Devices, and the Impact of Technology"*, **Authors: Misty E. Vermaat** Purdue University Calumet, **Publisher**: Cengage Learning, **ISBN-13:** 978-981-4698-87-0.

b) **Supplement Textbooks:**

- "*Foundations of Computer Science*", Author: Behrouz Forouzan, Firouz Mosharraf, Publisher: Longman; ISBN: 0 582 50720 0.
- *"Discovering Computers: Fundamentals, Fifth Edition"*, **Authors:** Gary B. Shelly & Misty E. Vermaat, **Publisher**: Delmar, Cengage Learning, **ISBN-13:** 978-1-4239-2702-0.

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